some of the patients. So-called clinics were established in about ten of the Coast cities. The money profits are stated to have approximated an annual sum of something like one million dollars!

A perusal of the newspaper items in the State Board column reveals the sordidness of the entire business. The jury's decision in the premises will be of interest. Present indications point to a long and bitter battle in the courts.*

Other State Association and Component County Society News.—Additional news concerning the activities and work of the California Medical Association and its component county medical societies is printed in this issue, commencing on page 430.

EDITORIAL COMMENT†

VENOUS PRESSURE

Determination of the venous blood pressure is at times of great value. In congestive failure, associated with failure of the right side of the heart, one of the first signs is increased pressure in the systemic or peripheral veins. Obstruction to a vein or venous channel will cause the pressure to increase distal to the site of the obstruction.

There are four fundamental factors affecting peripheral venous pressure, namely, (1) heart action, (2) intrathoracic pressure, (3) hydrostatic level, and (4) volume of blood in the vein.

Edema and the accumulation of serous fluid occasionally offer diagnostic problems. Determination of the venous pressure and estimation of the blood-plasma-proteins (indirect estimation of the approximate osmotic pressure of the blood) are usually of great help in the differential diagnosis between congestive heart failure, venous obstruction, and the edema of renal disease, depleted nutritional states, blood-loss and certain other metabolic disturbances.

There are two methods for determining venous blood pressure: (1) direct, and (2) indirect. The direct method is based upon a direct measurement of the pressure within a vein by means of a manometer connected with a needle or cannula introduced into the vessel. The indirect method depends upon the external pressure necessary to collapse a vein. The direct method should be chosen when reasonably accurate readings are required or when there is difficulty in obtaining a prominent pliable external vein. The vein chosen and zero level of the manometer tube should be horizontal to the mid-axillary line. This is approximately the level of the right auricle in the normal chest, with the patient in the recumbent position. This can be accomplished by using a long spirit level. The heart has been questioned as the point from which the hydrostatic factor in venous pressure is measured. However, for clinical purposes it is necessary to have a more or less fixed point or landmark to serve as, at least, a hypothetical zero level. The patient should rest in recumbency for at least fifteen minutes before the test. The manometer tube should have a bore not smaller than 4 millimeters. In the direct method a needle of 18 gauge is sufficient, and sterile aqueous solution of 2 per cent sodium citrate can be used to fill the small Kaufman-Luer syringe, rubber tubing and manometer to the level which is assumed to be the approximate pressure. All air should be excluded, and the plunger of the two-way syringe pushed in to the closed position. The needle is introduced well into the lumen of the vein. The plunger of the syringe is then withdrawn to the sidearm of the syringe, allowing the blood stream to be in direct contact with the manometer tube.

In patients suffering from congestive heart failure it is not uncommon to obtain readings of from 20 to 30 centimeters and occasionally even higher by the direct method described. Under normal conditions of tissue resistance, capillary permeability and osmotic pressure, the edema level of the venous pressure, as measured in one of the large superficial veins of the flexor surface of the elbow, is from 16 to 18 centimeters of the citrate solution. The normal pressure in this vein varies from 4 to 12 centimeters.

The pressure in the venule loop of capillaries is the most important factor in the production of edema of cardiac origin. This venule pressure is difficult to obtain, and at the present time it is not practical to obtain this reading for routine clinical use. The venule pressure is greater, but parallels the venous pressure in rise or fall.

Some clinicians obtain a rough estimation of the venous pressure by observing the level above the heart at which the superficial veins of the hand will collapse.

Serial determinations of the venous blood pressure are of great value in estimating the response of a patient suffering from congestive failure of the right side of the heart.

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DETERMINATION OF BLOOD VELOCITY BY THE SODIUM DEHYDROCHOLATE METHOD

There are available four principal methods for the estimation of the speed of blood-flow in humans. These are: (*a*) The radium method of Blumgart,[1] in which radium emanation is injected intravenously and its arrival in any given part of

* Editor's Note.—The trial came to a sudden end and the jury found eleven defendants guilty. A newspaper item on page 440 gives additional information concerning the penitentiary sentences imposed by the Court.

† This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California Medical Association to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

1. Blumgart, H. L., Gargill, S. L., and Gilligan, D. R.: Studies on the Velocity of Blood Flow, J. Clin. Investigation, 9:69 (Aug.), 1930.
—The Velocity of Blood Flow in Health and Disease, Medicine, 10:1 (Feb.), 1931.